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SYNOPSYS, INC. C/O HAYNES BEFFEL & WOLFELD LLP
P.O. BOX 366
HALF MOON BAY, CA 94019

EXAMINER	
SIEK, VUTHE	

ART UNIT	PAPER NUMBER
2825	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/828,547	VAN GINNEKEN, LUKAS P.P.	
	Examiner	Art Unit	
	VUTHE SIEK	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,12 and 19-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,12 and 19-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to application 10/828,547 and amendment filed on 01/20/11. Claims 11, 12 and 19-23 remain pending in the application, where claims 1-10 and 13-18 are canceled. Applicants are request to renumbering claims accordingly subjected to claim objections below.

Claim Objections

2. Note that error of claims numbering has been since filing of preliminary amendment filed 01/27/05. Applicants are requested to correct claim numbering since the preliminary amendment filed 01/27/05 thereon. Originally the application has claims 1-41. So all claims filed since preliminary filed 01/27/05 are objected to because such error as followed. 1) Preliminary amendment filed 01/27/05: Claims 1-41 should be canceled, instead of cancel claims 2-23. Claim 1 should be renumbered to claim 42 in the preliminary amendment filed 01/27/05. 2) Response/amendment filed 09/19/07: claim 1 (canceled), should be claim 41 (canceled) and new claims 2-15 should be renumbered to claims 42-55 respectively. 3) Response accompanying RCE filed 05/07/08: claim 1 (canceled), should be claim 41 (canceled) and new claims 2-15 should be renumbered to claims 42-55 respectively. 3) Response/amendment filed 11/03/08: status of the claims 3) will stand. 4) Amendment accompanying RCE filed 06/15/09: claim 1 (canceled), should be claim 41 (canceled) and new claims 2-15 should be renumbered to claims 42-55 respectively; new claims 16-18 should be renumbered to claims 56-58 respectively. 5) Supplemental amendment filed 07/24/09: claim 1 (canceled), should be claim 41 (canceled); claim 2 should be claim 42; claims 3-

4 (canceled) should be claims 43-44 (canceled); claim 5 should be claim 45; claim 6 (canceled) should be claim 46 (canceled); claims 7-18 should be claims 47-58 respectively. 6) Response/amendment filed 12/15/09: claim 1 (canceled), should be claim 41 (canceled); claim 2 should be claim 42; claims 3-4 (canceled) should be claims 43-44 (canceled); claim 5 should be claim 45; claim 6 (canceled) should be claim 46 (canceled); claims 7-18 should be claims 47-58 respectively. 7) Amendment accompanying RCE with interview summary filed 07/06/10: claims 1-10 (canceled) should be claims 42-50 (canceled); claims 11-12 should be claims 51-52; claims 13-18 (canceled) should be claims 53-58; claims 19-21 should be claims 59-61 respectively. 8) Amendment/response filed 01/20/11: claims 1-10 (canceled) should be claims 42-50 (canceled); claims 11-12 should be claims 51-52; claims 13-18 (canceled) should be claims 53-58; claims 19-21 should be claims 59-61 respectively; claims 22-24 should be claims 63-64. Appropriate correction is required as suggested by Examiner and applicants should revisit the application file for any error.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 19, 20, 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention. The recitation of "prior to the assignment of wire loads based on an initial placement of the circuit path", "prior to the assignment of wire loads based in the initial placement of the circuit path" (claims 19 and 22) do not describe in the specification. Applicants refer to pages 56 lines 4-15. The specification does not describe the claim as recited. The specification describe only “prior placement” (see also specification starting page 48 line 19). Same rejection applied to the recitation "initial delay values" and "adjusted delay value".

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 11, 23-24 are is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation of "using gain considerations" is vague because it is not sure what using gain considerations are about. It can be a relative term because the claim does not set forth a metes and bounds of the claim limitation. Therefore, it is uncertainty of the claim limitation. Applicants are requested to clearly define this claim limitation and each claim limitations because claim limitations have been changed from time to time.

6. Claims 11, 19, 23-24 are is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation of "initial placement" is rejected based in rejection of 112/1st above. In addition, “initial delay values", "adjusted initial

delay" need clarification to make the record of the application clear. What "initial delay values" and "adjusted initial delay" referred to and how each can be determined? Because compressing or stretching delay may involve sizing or done something else. Examiner requests applicants to make the record clear according to the specification originally filed.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 11, 12 and 19-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-43 of U.S. Patent No. 6,453,446 and claims 1-19 of U.S. Patent No. 6,725,438. Although the conflicting claims are not identical, they are not patentably distinct from each other. 6,453,446 claiming selecting a plurality of cells from a cell library to implement a circuit path (claim 1 step (a)), determining initial delay values for the selected cells based on corresponding preferred gains (claim 1 step(a), the selected cells having an initial

intended delay associated therewith for ensuring that predetermined timing constraints are met that can be suggested as preferred gains be met); prior to placement of the circuit path, determining an adjusted initial delay value by performing at least one of compressing the initial delay value or stretching the initial delay value (claim 3 recites prior to the step of routing, the area and placement of each of the selected cells and the lengths of the wires is finalized; claims 12-15 recites stretching the initial intended delay after the step of determining the placement and before the step of determining the area; compressing the initial intended delay after the step of the placement and before the step of determining area; these steps mean that stretching and compressing the initial intended delay prior to the placement of the circuit path because the placement of the cells does not include establishing a routing or placement of a circuit path; Claims 2, 5-7 describe performing assigning wire loads to the selected cells, making size area adjustment during or after placement to maintaining the initial delay value or the adjusted initial delay and performing routing of the selected cells; claims 11-12 describe inserting a buffer. Claims 49-52 describe associating an initial gain values with each selected cell and computing initial intended delay value based on the initial intended delay value, wherein the associated gain value is reduced to compress the associated relative delay of value of the cells to assist in satisfying the predetermined timing constraints, wherein the associated gain values of the selected cells are increased to stretch the associated relative delay value of the cells to assist in reducing the area of the cells. Since the claims refereed to modeling the delay, it apparently the steps are done prior establishing a routing. It apparently that the claims of the patent anticipate or

render the claims of the instant application obvious to an artisan skill in the art. The claims of 6,725,438 describe: selecting cells from a cell library to be coupled to each other, each having associated relative delay value, determining an initial intended area of each cell and lengths of wires coupled cells to meet predetermined timing constraints, prior to step of routing, finalizing the area and wire lengths, stretching the associated relative delay value of the selected cell to decrease an area of each of the selected cell delay value of each selected cell and compressing the associated relative delay value to assist in satisfying the predetermined timing constraints and the compressing is limited by a gain requirement of the selected cell; assigning loads to each cell including a net weight so that each cell selected to be placed will be met the predetermined timing constraints and performing routing. It is noted that the steps of stretching and compressing are performed prior establishing a routing or placement of a circuit path. In order to actually meet timing constraints and according to a gain requirement as intended by design requirements, it is well known on an artisan skill in the art make some adjustment to initial delay value or some sizes of selected cells. Therefore, Examiner contends that the current claims are obvious by the patent claims of both patents as described above.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 11, 12 and 19-20 are rejected under 35 U.S.C. 103(a) as being obvious over Li et al. (5,666,290).

11. As to claim 19, Li et al. teach an automated method for designing an integrated circuit layout with a computer, comprising:

selecting cells from a cell library to implement a circuit path (col. 9 lines 55-67; Fig. 2 shows receiving a netlist (listing of components and interconnection there between components) description of the circuit for which components are to be optimally placed; identifying driver/buffer pairs to be placed); prior to assignment of wire loads based on an initial placement of the circuit path, determining initial delay values for the selected cell (Di is the intrinsic delay of the component between its input and output; col. 2 lines 35-67; col. 6 lines 12-62 described a delay Ds that is broken into: Di is intrinsic delay of a selected component is determined; S.Cin; S.Cw; and delay Drc); prior to assignment of wire loads based on an initial placement of the circuit path, determining an adjusted initial delay value for at least one of the selected cells (col. 8 lines 1-17; updated current placement is the input of the constraint engine which derives new path delay based on the current placement meaning performing initial delay value adjustment to meet input initial constraints; col. 6; Fig. 2-3) by performing at least one of: compressing the initial delay value of at least one of the selected cells to meet delay constraints for the circuit

path (col. 8 lines 1-17, performing new placement so that initial delay value will be met input initial constraints; col. 6; Fig. 2-3), and

stretching the initial delay value of at least one of the selected cells to reduce slack in the circuit path (col. 6 lines 26-67; col. 7 lines 1-47; Fig. 2-3);

performing an initial placement of the selected cells for the circuit path (Fig. 2 show perform initial placement 18), and assignment of wire loads to the selected cells based in the initial placement (Fig. 2 shows compute path delays taken wire loads into considerations, col. 6 lines 26-62; assign weights to nets, constant net weights specified by a user and/or derived from maximum capacitance (MAXCAP) value assigned by a user; col. 5 lines 55-60);

adjusting size or area of one or more of the selected cells during or after the initial placement, to maintain the initial delay value or the adjusted initial delay value for the corresponding selected cells (col. 8 lines 40-57; Fig. 2-4); and

routing the selected cells for the circuit path (Fig. 9 show routing of the selected cells for the circuit path). Li et al. do not explicitly teach stretching or compressing the initial delay prior to the initial placement. However, Li et al. teach input initial constraints, identifying driver/buffer pairs, performing initial placement and computing path delays (Fig. 2). In order to meet the input constraints, it would be obvious to an artisan skill in the art at the time the invention was made to perform an additional step by compressing the initial delay value of at least one of the selected cells to meet delay constraints for the circuit path when the initial delay value is exceeded input initial constraints or stretching the initial delay value of at least one of the selected cells to reduce slack in

the circuit path prior the initial placement in order to meet the input constraints; and making some size adjustment of the initial size of the component described in col. 8 lines 15-17) during the placement or after the placement so that the initial delay value or the adjusted initial delay value would be maintained before optimizing routing providing less time to perform optimizing of the routing.

12. As to claim 20, Li et al. teach, prior to the initial placement, inserting a buffer in the circuit path when there is available slack in the circuit path (Fig. 9 show a driver or buffer 108 is inserted; col. 6 lines 13-63).

13. As to claim 11, Li et al. teach wherein determining the initial values based on gain considerations of the cells including using a continuous buffering assumption (Fig. 9 show a driver/buffer pairs from which Di intrinsic delays are determined; driver/buffer pairs determines a gain).

14. As to claim 12, it would be obvious to an artisan skill in the art at the invention was made to determine the initial delay value (delay described earlier; col. 6) during library analysis because by doing so the initial delay value can be equally pre determined prior the routing process.

15. As to claim 21, Li et al. teach, including prior to the initial placement, determining net weight values for the selected cells (Fig. 2 show assign weights to nets; summary), the net weight values representing sensitivity of total area of a circuit design to load on the corresponding cell (Fig. 2, summary; since the net weight values include a net that inherently include area), and for determining whether to insert a buffer on the output of a given cell in the selected cells using the net weight value of the given cell (Fig. 2; col. 8

lines 40-58). Although, Li et al. does not recite exactly language as claimed (e.g., determining whether to insert a buffer on the output of a given cell in the selected cell using the net weight value of the given cell, the claim limitation would be obvious to an artisan skill in the art because insert a buffer such as an identified drive/buffer pairs (Fig. 2; show identifying driver/buffer pairs to be placed or inserted as shown in Fig. 9 and 10) because by inserting a buffer on the output of a given cell using the net weight value of the given cell would expect to meet the input initial constraints shown in Fig. 2 of Li et al..

16. As to claim 22, remarks set forth in claims 19 and 21 applied because of the similar claim limitations. In addition, Li et al. teach placing or inserting a driver or buffer pairs and slack (summary; Fig. 2-4). The claim limitation of inserting a buffer in the circuit path when there is available slack in the circuit path is obvious to an artisan skill in the art at the time the invention was made because inserting a buffer in the circuit path as shown in Fig. 9 and 10, when there is available slack in the circuit path would expect to meet input constraints as shown in Fig. 2.

17. As to claims 23 and 24, Li et al. teach said initial delay values are determined based on a typical load value (col. 6; Ds = Di + S.Cin + S.Cw + Drc) determined using gain considerations (Fig. 2 show computing path delays, where the path delays include determining initial delay values for the selected cells (col. 6 lines 25-62; the slack is defined as the difference between the upper constraint on the path delay Dc, and the sum of the intrinsic delay Di of the component of each segment and the driver response

delay for each segment due the sum of input capacitance Cin).

Remarks

18. Applicant's arguments and amendment filed 01/20/11 have been fully considered but are moot in view of the new ground(s) of rejection. Applicants have been changed the language of the claims from time to time, making difficulty to follow. During recent interview with Mr. Mark Haynes and Dr. Walker whom explain what is the novelty of the invention as described in interview summary filed 06/08/10 and 07/06/10. As amendment filed on 07/06/10, gain in independent claim has been removed. So no novelty in the independent claims appears to exist as understood by Examiner and explained by Dr. Walker (see interview filed 07/06/10). Examiner has request Applicants to clarify in the claim regarding to preferred gain recited in the claim because the limitation is uncertain. A metes and bounds cannot be defined. Examiner tried to determine the metes and bounds of the claim limitation but unable to located. No further explanation by applicants. However, “preferred gain" has changed to "gain considerations". The limitation "gain considerations" has been rejected under 112/2nd paragraph above. What are the metes and bounds of the gain considerations? Examiner requests Applicants making records of this application clear as possible because the subject matter is sensitive and the parent cases involve litigation. Further, Examiner requests Applicants making each limitation as clear as possible in order to avoid misinterpretation of each claim limitation. For example, Applicants have changed language of claim 19 as underline. However, the specification portion cited for support

by applicants does not describe such amendment in the claim. Examiner refers to Fig. 2 of Li et al. show initial placement and placement of component… Applicants tried to escape prior art to Li et al., then in the recent amendment, claim language has been changed to include “prior to assignment of wire loads based in an initial placement of the circuit path" (cited support page 56 lines 4-15). Examiner read the cited portion; it does not appear to match the claim language amended. Examiner still maintains that the language changed in amendment means no routing involved in the step performed by the claim limitation. Li et al. taught that in Fig. 2-4. Double patenting rejection under obviousness type still maintained because compressing or stretching are done before a routing process using a finalized area of each of the selected cells and finalized wire lengths of wires coupled to each of the selected cells (claim 2 of 6,725,438). Same to claim 2 (6,453,446), prior to the step of routing, the area and placement of each of the selected cells and the lengths of the wires is finalized. Examiner contents that any stage of the design process the step of stretching or compressing can be done and obvious to an artisan skill in the art. Another Terminal Disclaimer is required to overcome any double patenting rejection obviousness type. Examiner did not restrict the claims in the parent cases. Therefore, the arguments regarding to restriction restricted by Applicants are moot. Note that the allowable subject matter has withdrawn due the amendment necessitating the new ground(s) of rejection because the recitation “based on corresponding preferred gains of the selected cells” has been removed. The removed recitation was subjected to 112/2nd in the office action filed 12/20/10 because of uncertainty. The limitation is declared to be novel of the invention (see interview

summary filed 07/06/10). The removal was changed the scope of the claim invention. Acknowledging that the scope of the claim invention was changed due the amendment, Applicants request to reconsider the allowable subject matter claim 21. Due to the amendment by removing "…preferred gains…" subject matter declared to be novel by Applicant, independent claims can not be novel and depending claim 21 is rejected. Therefore, the finality with the new ground(s) of rejection due to necessitated by the amendment is proper.

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (571) 272-1906.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on (571) 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Vuthe Siek/
Primary Examiner, Art Unit 2825